



LAND SURVEYING

SCIENCE

Technology

STI

SOUTHEAST
TECHNICAL INSTITUTE

Southeast Technical Institute

New Program Application

Land Surveying Science Technology

Associate in Applied Science



Fall 2010

Land Surveying Science Technology – Associate in Applied Science

Executive Summary

Southeast Technical Institute has been working closely with the South Dakota Society of Professional Land Surveyors to provide a degree that will meet the new requirements set by article 20:38:14:05 which outlines the educational requirements to become a land surveyor in South Dakota. This program will be the first in South Dakota to offer the required 24 credits in Land Surveying courses to meet the new requirements. This program is a branch of our Civil Engineering Technology program and is created to provide a path for students to major in both areas if desired. STI has the expertise to lead South Dakota with this program, as a Licensed Professional Land Surveyor will develop and teach the curriculum. The program will be offered traditionally at STI starting Fall 2010. The program has the support of the South Dakota Society of Professional Land Surveyors.

Identification and Description of the Program:

Land Surveying is the technique and science determining specific points on a plot of land to help show the boundaries for construction or to help develop land maps. Surveyors use math and equipment to help determine the points of a plot so they are useful for laying out the land. Land Surveying also includes inspection, information gathering, research and data analysis to help determine the points and property boundaries.

Land Surveyors started measuring points of land using chains with links of a known length or measuring tapes. Angles were measured using a compasses and telescopes and heights were measured using an altimeter. Topographical maps were created using triangulation where distances, elevations and directions were calculated between objects at a great distance from a known point. Today we have Global Positioning System (GPS) where satellites and a total station containing an electronic distance measurement device (EDM).

Objectives and Purpose of the Program:

The primary objective of this program is to provide qualified personnel for the land surveying industry.

This objective will be met by providing an education that prepares the graduate to enter into one of several available positions. Another objective of this program is to provide a solid foundation for those professionals working toward licensure.

Methods of Attaining the Objectives of the Program:

Upon receipt of the State Board of Education approval, Southeast Technical Institute will recruit up to 24 students for the first year to begin in Fall of 2010. The marketing campaign to recruit students will include web, print and radio spots.

The first year of the Land Surveying Program is the same as our current Civil Engineering Technology program so we will recruit from our existing students as well. We believe that we will have several students transfer from different programs and we will also have several students double-major.

The Land Surveying Science Technology Program will be offered traditionally, during the day, at STI.

During the development of the Land Surveying program, STI has worked with several individuals in the surveying industry and specifically individuals from the South Dakota Society of Professional Land Surveyors. As with all programs, STI will develop an advisory board to help assist in the development and refinement of curriculum.

Description of Labor Market Demands of the United States, State of South Dakota, Student Needs, and Industry Support

National Data

According to the Bureau of Labor Statistics there will be an increase of 15% in surveyors needed from 2008 to 2018. The numbers will increase from 57,600 surveyors in 2008 to 66,200 surveyors needed in 2018.

State/Regional Data

In South Dakota, the Department of Labor projects a 13.9% increase in the need for Surveyors in South Dakota. In addition, the DOL has a separate line for Surveying and Mapping Technicians, which is expected to increase 8.7%.

Student Needs

This program will provide students with an opportunity to enter an expanding industry that has many different entry points, areas for growth, and training that meets industry need and also helps the student in their expectation of licensure. The program provides a background in engineering technology to make them a fit for small to large companies.

Population to be Served by the Program:

Southeast will recruit students from a variety of backgrounds, including both traditional and non-traditional. It is anticipated that this program will attract students directly out of high school in addition to those who are unemployed, underemployed and those wanting to make a career change. We believe that existing students will look at this program as a viable option in addition to a Civil Engineering Technology or Construction Management Technology degree.

Program Capacity

Starting Semester	Delivery Format	Capacity
Fall 2010	Traditional Day	24

Projected Three-Year Budget Plan

BUDGET PROJECTIONS			
Year	2010-2011	2011-2012	2012-2013
Salaries/Benefits	62,000.00	\$64,000.00	\$66,000.00
FTE	1.0	1.0	1.0
Staff Travel	\$250.00	\$1,000.00	\$1,000.00
Instructional Materials	\$3,500.00	\$2,000.00	\$2,000.00
Capital Equipment	\$45,000.00	\$45,000.00	\$45,000.00
Software/Books/Fees	\$1,000.00	\$1,000.00	\$1,000.00

Salaries/Benefits/FTE/Equipment

The Land Surveying Program shares a common core with our Civil Engineering Technology program. The Civil Engineering program has included some Land Surveying courses as part of its curriculum. The current Civil Engineering Technology instructor is a registered Land Surveyor and he will take the lead on the Land Surveying program. STI will hire a replacement Civil Engineering Technology Instructor. STI currently has land surveying equipment, but will continue to provide additional pieces for student use.

Program Competencies and entry and exit points of suboccupations:

Program competencies are to be originally based upon working with the South Dakota Society of Professional Land Surveyors (SDSPLS). Our instructor is a key member of this society and he has worked with the leadership of SDSPLS to provide a path for an STI Land Surveyor Graduate to become a registered surveyor in South Dakota. STI has been in talks with South Dakota State University to work together to help provide support back and forth from both institutions, and this summer our instructor will be teaching a course for SDSU.

Graduates of our program will have a path to become a registered land surveyor and we will work with SDSU and St. Cloud State University to provide a short path to a Bachelors in Surveying or Engineering Technology.

Statement of nonduplication:

Southeast Tech will be the only provider of an Associate of Applied Science degree in Land Surveying in the State of South Dakota. A new requirement by the South Dakota Society of Professional Land Surveyors requires 24 credits of surveying courses. STI is the only school in South Dakota who can meet this requirement.

Curriculum Design and Research:

Semester	Course Title	Credits	Lec/Lab
First			
CET 110	Survey 1 – Fundamentals	4	2/4
DT 102	Print Reading	1	0/2
CIS 101	Computer Essentials	2	1/2
MATH 101	Intermediate Algebra	4	4/0
CAD 120	Computer Assisted Design I	4	2/4
SSS 100	Student Success Seminar	2	2/0
Second			
CET 121	Soils	3	2/2
CET 120	Survey II – Topo	4	2/4
CET 123	Civil CAD II – Civil 3D	2	1/2
ENGL 101	Composition	3	3/0
MATH 116	Pre-Calculus	3	3/0
Summer			
CET 130	Land Surveying Internship (optional)	2	0/40
Third			
CET 215	Survey III – GPS	3	2/2
LLS 2XX	Control & Geodetic Surveying	3	2/2
ACT 220	Construction Estimating	3	2/2
CET 226	Civil CAD III – Grading & Design	3	2/2
LLS 2XX	Geographic Information Systems	3	2/2
ENGL 201	Technical Writing	3	3/0
Fourth			
LLS 2XX	Research & Platting	3	2/2
CET 225	Route Layout & Design	4	2/4
LLS 2XX	Boundary Law	3	3/0
CET 224	Water & Waste Water	3	3/0
PSYC 101	General Psychology	3	3/0
SOC 150	Social Problems	3	3/0
Total	Not counting Internship	74	

Wage Factor

Data from the South Dakota Department of Labor puts the average hourly wage from \$14.79 to \$25.51 for jobs within the Land Surveying industry. Wages at the 10th percentile were from \$9.99 to \$17.35.

See Table Below:

South Dakota Department of Labor Data			
Position	Employees	Average Hourly Wage	10 Percentile Wage
Surveyors	140	\$25.51	\$17.35
Surveying and Mapping Technicians	130	\$14.79	\$9.99

Data from the National Department of Labor puts the average hourly wage from \$16.75 to \$30.09 for jobs within the Land Surveying Industry. Wages at the 10th percentile were from \$10.98 to \$16.83. See

Table Below:

National Department of Labor Data			
Position	Employees	Average Yearly Wage	10 Percentile Yearly Wage
Surveyors	57,600	\$52,980.00	\$29,600
Surveying and Mapping Technicians	77,000	\$35,120	\$21,680

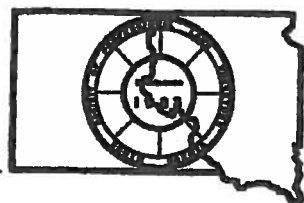
Survey data of regional Land Surveying Companies produced these responses from 37 representatives from South Dakota.

Total Jobs Available			Salaries Available			
1 Year	3 Year	5 Year	1 Year	3 Year	5 Year	After Lic
8	12	14	\$28,250.00	\$30,090.91	\$36,666.67	\$42,775.00

Appendix A – Letters of Support

Kristi Goehring

President of The South Dakota Society of Professional Land Surveyors



SOUTH DAKOTA SOCIETY of PROFESSIONAL LAND SURVEYORS

Affiliate of American Congress on Surveying and Mapping

April 25, 2010

Dr. Craig Peters
Southeast Technical Institute
2320 Career Avenue
Sioux Falls, SD 57107

RE: Land Surveying Science Technology Proposed Program

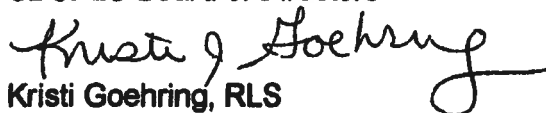
Dear Dr. Peters,

The South Dakota Society of Professional Land Surveyors Board of Directors is unanimously in support of the development of the Land Surveying Science Technology Program at Southeast Technical Institute.

Rod Breitling introduced the program to our board at our annual convention in January. We are confident that the program being developed is in line with the education requirements that have been recommended by SDSPLS to the SD Board of Technical Professions. We feel development of this program benefits the surveying society as a whole. It is expanding the educational opportunities for future surveyors.

Please contact us if we can be of more assistance to you during the development of this program. We appreciate the work STI does to educate individuals and promote surveying education in South Dakota.

Sincerely,
SDSPLS Board of Directors


Kristi Goehring, RLS
2010 President

Cc Rod Breitling

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